Special Educational Services

Alberta
EDUCATION

Report of The Advisory Committee On Computer-Assisted Career Information System Evaluation

Executive Summary

April 1986

COMPUTER-ASSISTED CAREER INFORMATION EVALUATION

EXECUTIVE SUMMARY - REPORT OF THE ADVISORY COMMITTEE

Background

In the fall of 1981, Alberta Education undertook a review of computer-assisted career information systems at several secondary schools in Alberta. The University of Calgary was commissioned to monitor this aspect of the review and to evaluate the performance of selected computer-assisted career information systems.

Two schools field-tested the Career Factory program, two the CHOICES Mainframe program, two the Micro CHOICES program, and one field-tested both Career Factory and Micro CHOICES. Pre- and post-intervention measures were taken on a number of student variables.

Questionaires were developed to survey the perceptions and concerns of various stakeholder groups, including students, teachers, counsellors, parents, administrators and educational policymakers. The attitudes of counsellors toward computers and computer applications in career development and career counselling were polled. The knowledge and skill training needs of counsellors as well as the computer-assisted career information system support needs of counsellors were assessed.

A summary of the comparative features of the Career Factory, Micro CHOICES, Psych Corp Directions, and Discover programs was developed, and the costs of implementation and continued operation of these systems were investigated.

In January, 1983, an assessment of the degree to which the CHOICES computer-assisted career information and exploration program was suitable for use with hearing impaired students was initiated at the Alberta School for the Deaf. A secondary purpose of the assessment was to identify modifications which would give the program greater flexibility to meet the needs of these students.

Qualitative and quantitative data for this study were collected by means of questionnaires completed by one group of student users, guidance counsellors and selected members of staff; structured interviews with another group of student users, the counsellor and selected parents; and on-site observations.

A third component of the review of computer-assisted career information systems was initiated by Alberta Education in June, 1984. The purposes of this component were to gather additional data on the extent and type of computer-assisted career informational services in use in Alberta

and throughout Canada. As well, the views and recommendations of representative school jurisdictional personnel were gathered.

An Advisory Committee was struck during the fall of 1981 to monitor the review, to provide feedback to Alberta Education personnel and to make recommendations to the Minister of Alberta Educaion based on conclusions drawn following completion of the three components of the review.

Findings

Four microcomputer assisted career information systems -- CHOICES, Career Factory, Psych Corp Directions, and Discover -- were evaluated for this project. The findings were that all the systems have some positive features, yet all have faults and limitations. No one system excels in all respects. The evaluation component focused on CHOICES (mainframe and micro) and Career Factory. While it was found that Micro CHOICES may be more effective than Career Factory with Grade 10 students, Career Factory appears equally effective with Grade 12 students. Career Factory appears to reduce the number of occupations to which students could aspire. However, this may reflect greater realism in occupational choice.

Computer-assisted information systems, especially Micro CHOICES, appear to increase the student's level of knowledge about his or her preferred vocation. As well, computer-assisted career information systems, especially CHOICES mainframe, appear to have a significant impact upon the development of a mature career attitude. The use of a "bargaining" approach on the Micro CHOICES appears to lead to effective career compromises (readiness to adjust expectations to reality).

In general, motivating and scheduling students requires considerable effort. The implementation of a computer career service initially will prove disruptive to established school routines. Further, all students are not immediately motivated to use a computer-assisted career information system. Students using Micro CHOICES expressed greater satisfaction than students using other systems, while students using Career Factory expressed greater dissatisfaction.

Teacher and counsellor respondents suggested the following potential benefits from computer-assisted career information systems:

- More realistic career choices.
- Better course and program selection.
- Increased self-awareness.
- Greater commitment to studies.
- Enhanced career education programs and services.
- Increased computer literacy.
- Equality of opportunity.

Potential harmful outcomes from compuer-assisted career information systems include:

- Over-reliance on computer outputs.
- Failure to take computer counselling seriously.
- Discouragement due to lack of options generated by the computer.
- Failure to provide adequate personal counselling.
- Unrealistic career expectations for students with specific difficulties.

Educational decision-makers including Superintendents indicated that computer technology should be used in the schools where it was found to be effective. These respondents rated career counselling in secondary schools to be "important" or "essential" on a seven point scale. The implementation of computer-assisted career information systems was ranked midway in a wide range of educational priorities. These decision-makers indicated that computer career services not be implemented at the expense of other high priority items, that costs be reasonable, that computers be viewed as tools rather than substitutes for counsellors, that in-service training be provided before implementing a career computer system, and that the data base of career computer systems be accurate and regularly updated. The employment of trained counsellors to provide career counselling to high school students was favoured. Since there is a shortage of trained counsellors, especially in rural areas, more school counsellors will need to be trained.

The costs of implementing a computer career service vary greatly, depending upon variables such as:

(a) Type of system adopted.
(b) Hardware selected.
(c) Deployment of personnel.
(d) Training needs of personnel.
(e) Space and furnishings requirements.

On the average, career computer systems were found to be used about four hours each school day, or about 750 hours during the school year. A total of three hours of student time is required to fully explore both the occupations and the education/training files. Hence, one dedicated computer-assisted career information terminal for each 250 students may be required to provide an adequate computer-assisted career information service.

Summary

It was found that career development is a complex phenomenon that is the product of systematic educational and counselling interventions and of

many incidental or undocumented influences. Formal career guidance courses may:

(a) Encourage students to take more responsibility for their career development.
(b) Reduce occupational stereotypes.
(c) Increase level of occupational aspiration.

However, a student's confidence in his or her ability to develop a satisfying career may be diminished by a careless presentation of the realities and complexities of career develpment.

The issue is not whether or not to use computers in career development, but how best to use them. The computer is an extension of the teacher's and counsellor's expertise, particularly in moving the student through a procedure at the student's rate of speed.

Generally, the use of the computer is effective in reducing the time required by counsellors in providing ready access to vast amounts of information that could not be retrieved effectively through traditional methods. However, print and audio visual references are still required to provide increased depth of information.

The computer is a tool that may be used in career development to facilitate management of vast amounts of information and to assist students in exploring career options. The computer provides one efficient option to assist students in charting a variety of career options. Recent innovations to CHOICES at the junior high level provide increased support at that level. The mainframe version of CHOICES has been deleted with advances in the capacity of micro versions.